



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,254	02/19/2004	Geary L. Eppley	MS1-1862US	4978
22801	7590	07/17/2008		
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201				
EXAMINER				
SYED, FARHAN M				
ART UNIT		PAPER NUMBER		
2165				
MAIL DATE		DELIVERY MODE		
07/17/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/782,254

Applicant(s)

EPPLEY ET AL.

Examiner

FARHAN M. SYED

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-32 are pending.

Response to Remarks/Argument

2. Applicant's arguments filed 18 April 2008 have been fully considered but they are not persuasive.

Applicant argues:

- (1) "Applicant disagrees with the Examiner's obviousness rejections."

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Altinel teaches a document filtering system, XFilter, that provides highly efficient matching of XML documents to large number of user profiles. The XFilter engine uses a sophisticated index structure and a modified Finite State Machine to quickly locate and examine relevant profiles. Lakshmanan teaches a MatchMaker system that provides index-based matching algorithms as a core to provide timely notification services to registered users. Schneider teaches database system for improving execution speed of database queries (e.g., for decision support) by optimizing execution of nested queries or "subqueries," such as are commonly used in client/server database environments..

(2) "Altinel in no way indicates that its Filter Engine is 'configured to handle only a subset of a language' that does not include all aspects of the language, as specified in claim 1."

The Examiner disagrees. Altinel teaches its filter engine is configured to handle only a subset of a language (i.e. *"The main structures used in the Filter Engine are depicted in Figure 3. Each XPath query is decomposed into a set of path nodes by the XPath Parser."* The Examiner believes the process of decomposing an XPath query into a set of path nodes includes handling a subset of a language (i.e. SQL/XML), and does not include all aspects of the language, because it is decomposed.)(see section 4.1, pages 56-57).

(3) "Schneider describes processing of SQL queries, but makes no suggestion of a sub-engine configured to handle only a subset of SQL."

The Examiner disagrees. Schneider teaches a sub-engine configured to handle only a subset of SQL (i.e. *"The Engine 260 itself comprises a Parser 261, Normalizer 263, Compiler 265, Execution Unit 269, and Access Methods 270. Specifically, the SQL statements are passed to the Parser 261 which converts the statements into a query tree—a binary tree data structure which represents the components of the query in a format selected for the convenience of the system."* The Examiner believes the Parser deconstructs the SQL query into query nodes, therefore handling only a subset of SQL, and query nodes are passed to a Normalizer (i.e. sub-engine) which performs error checking.)(at least column 5, lines 1-17).

(4) "Altinel in view of Lakshmanan and Schneider does not teach the claimed, 'determining whether the input can be processed by an optimized filter sub-engine,

wherein the optimized filter sub-engine is configured to handle only a subset of the language," wherein the subset of the language does not include all aspects of the language."

The Examiner disagrees and has addressed this argument in the rejection below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over a non-patent literature titled "Efficient Filtering of XML Documents for Selective Dissemination of Information" by Mehmet Altinel, et al., 26th VLDB Conference, 2000, pages 53-64 (previously presented and known hereinafter as Altinel) in view of a non-patent literature titled "On Efficient Matching of Streaming XML Documents and Queries" by Lakshmanan et al, University of British Columbia, Canada, 2002, pages 1-20 (previously presented and known hereinafter as Lakshmanan) and in further view of Schneider (U.S. Patent 5,668,987).

As per claims 1, 8, 15 and 23, Altinel teaches a method, comprising: receiving an input that conforms to a language(i.e. *"There are two main sets of inputs to the system: user profiles and data items (i.e. documents)."*) The preceding text clearly indicates that the optimized filter

Art Unit: 2165

engine receives an input, which can be user profiles or data items.)(page 54, section 2.1, paragraph 1); determining whether the input can be processed by an optimized filter sub-engine wherein the optimized filter sub-engine is configured to handle only a subset of the language (i.e. *"The main structures used in the Filter Engine are depicted in Figure 3. Each XPath query is decomposed into a set of path nodes by the XPath Parser."* The Examiner believes the process of decomposing an XPath query into a set of path nodes includes handling a subset of a language (i.e. SQL/XML), and does not include all aspects of the language, because it is decomposed.)(see section 4.1, pages 56-57), wherein the subset of the language does not include all aspects of the language (i.e. *"When a document arrives at the Filter Engine, it is run through an XML Parser which then drives the process of checking for matching profiles in the Index."* The preceding text clearly indicates that the optimized filter engine is a filter engine and the input is a document that arrives for a filter engine to process it.)(Page 57, section 4.2, paragraph 1); and processing the input to derive a result (i.e. *"When the XML document arrives at the system, it is run through the parser, which sends "events" that are responded to by handlers in the filter engine. This process is described in Section 4.2. Once the matching profiles have been identified for a document, the document must be sent to the appropriate users."* The preceding text clearly indicates that the input, which is the XML document is processed to derive a result, which is the matching profiles that have been identified for a document, and sent to the users.)(Page 56, section 4).

Altinel does not explicitly teach the method of if the determining indicates that the input can be processed by the optimized filter sub-engine, then directing the input to the optimized filter sub-engine for processing; and if the determining indicates that the input cannot be processed by the optimized filter sub-engine, then directing the input to a general sub-engine for processing, wherein the general filter sub-engine is configured to handle all aspects of the language.

Lakshmanan teaches if the determining indicates that the input can be processed by the optimized filter sub-engine, then directing the input to the optimized filter sub-engine for optimized filter for processing (i.e. *"A more clever approach is to devise algorithms that make a constant number of passes over the document and determine the queries answered by each of its elements. This will permit set-oriented processing whereby multiple queries are processed together. Such an algorithm is non-trivial since: (i) queries may have repeating tags and (ii) the same query may have multiple matchings into a given document. Both these features are illustrated in Figure 1."*) The preceding text clearly suggests that a selective sub-engine occurs in the background that produces multiple matchings in a given document.)(Lakshmanan, page 4; Figure 1); if the determining indicates that the input cannot be processed by the optimized filter sub-engine, then directing the input to the general sub-engine for processing, wherein the general filter sub-engine is configured to handle all aspects of the language (i.e. *"We have implemented a MatchMaker system for matching XML documents to queries and for providing notification service. As an overview, XML data streams through the MatchMaker, with which users have registered their requirements in the form of queries, in a requirements registry. The MatchMaker consults the registry in determining which users a given data element is relevant to."*) *"A naïve way to obtain these labels is to process the user queries, one at a time, finding all its matchings, and compile the answers into appropriate label sets for the document nodes. This strategy is very inefficient as it makes a number of passes over the given document, proportional to the number of queries."* The preceding text clearly indicates that a general sub-engine is a user queries that is used to find all matchings. Unlike a specific sub-engine that returns selected matchings, a general sub-engine, akin to a user queries performs a general search that retrieves all matchings.)(Lashmanan, pages 3-4).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan to include the method of if the determining indicates that the input can be

processed by the optimized filter sub-engine, then directing the input to the optimized filter sub-engine for processing; and if the determining indicates that the input cannot be processed by the optimized filter sub-engine, then directing the input to a general sub-engine for processing, wherein the general filter sub-engine is configured to handle all aspects of the language with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

The combination of Altinel and Lakshmanan do not explicitly teach optimized filter sub-engine.

Schneider teaches optimized filter sub-engine (i.e. "optimization of query execution in the presence of one or more subqueries –queries embedded within other queries". The preceding text clearly indicates that optimized filter sub-engine is optimization of query execution in the presence of one or more subqueries.)(column 5, lines 40-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan and with the further teachings of Schneider to optimized filter sub-engine with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

As per claim 2, Altinel teaches a method, wherein: the optimized filter sub-engine and the general sub-engine are encompassed by a single filter engine (i.e. *"In an SDI system, newly created or modified XML documents are routed to the Filter Engine."* *"When a document*

Art Unit: 2165

arrives at the Filter Engine, it is run through an XML Parser which then drives the process of checking for matching profiles in the Index." *"A query path expression consists of a sequence of one or more location steps."* *"Each location step can also include one or more filters to further refine the selected set of nodes."*(Page 54, section 2.1, paragraph 4;page 57, section 4.2, paragraph 1; section 2.2, paragraph 2 and 3).

The combination of Altinel and Lakshmanan do not explicitly teach optimized filter sub-engine.

Schneider teaches optimized filter sub-engine (i.e. "optimization of query execution in the presence of one or more subqueries –queries embedded within other queries". The preceding text clearly indicates that optimized filter sub-engine is optimization of query execution in the presence of one or more subqueries.)(column 5, lines 40-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan and with the further teachings of Schneider to optimized filter sub-engine with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

As per claims 3 and 11, Altinel teaches a method, wherein the determining further comprises recognizing whether or not the input conforms to a grammar of the optimized filter sub-engine (i.e. *"For Xfilter, we implemented callback functions for parsing events of encounter: 1) a begin element tag; 2) an end element tag; or 3) data internal to an element. All of the handlers are passed the name and document level of the element for (or in) which the parsing event occurred."*)(Page 57, section 4.2, paragraph 3).

The combination of Altinel and Lakshmanan do not explicitly teach optimized filter sub-engine.

Schneider teaches optimized filter sub-engine (i.e. "optimization of query execution in the presence of one or more subqueries –queries embedded within other queries". The preceding text clearly indicates that optimized filter sub-engine is optimization of query execution in the presence of one or more subqueries.)(column 5, lines 40-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan and with the further teachings of Schneider to optimized filter sub-engine with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

As per claims 4 and 18, Altinel teaches a method, wherein the language comprises a query language based on eXtensible Markup Language (XML) (i.e. "*XML provides a mechanism for tagging document contents in order to better describe their organization. It allows the hierarchial organization of a document as a root element that includes sub-elements; elements can be nested to any depth.*").(Page 54, section 2.1, paragraph 3).

As per claim 5, Altinel does not explicitly teach a method, wherein the optimized filter sub-engine is a first optimized filter sub-engine and wherein the method comprises: if determining indicates that the input cannot be processed by the first optimized filter sub-engine, then instead of directing the input to the general filter sub-engine for

processing: determining whether the input can be processed by the a second optimized filter sub-engine, wherein the second optimized filter sub-engine is configured to handle only a subset of the language, and wherein the subset of the language that the second optimized filter sub-engine is configured to handle is different than the subset of the language that the first optimized filter sub-engine is configured to handle; if the determining indicates that the input can be processed by the second optimized filter sub-engine, then directing the input to the second optimized filter sub-engine for processing; and if the determining indicates that the input cannot be processed by the second optimized filter sub-engine, then directing then directing the input to the general optimized filter sub-engine for processing.

Lakshmanan teaches a method, wherein the selective sub-engine includes a first sub-engine which supports only a first unique subset of the query language and a second sub-engine which supports only a second unique subset of the query language (i.e. *"A more clever approach is to devise algorithms that make a constant number of passes over the document and determine the queries answered by each of its elements. This will permit set-oriented processing whereby multiple queries are processed together. Such an algorithm is non-trivial since: (i) queries may have repeating tags and (ii) the same query may have multiple matchings into a given document. Both these features are illustrated in Figure 1."*) The preceding text clearly suggests that a selective sub-engine occurs in the background that produces multiple matchings in a given document.)(Lakshmanan, page 4; Figure 1) and wherein the method comprises: determining whether the input can be processed by the first sub-engine or by the second sub-engine: if the determining indicates that the input can be processed by the first sub-engine, then directing the input to the first sub-engine for processing (i.e. *"A more clever*

approach is to devise algorithms that make a constant number of passes over the document and determine the queries answered by each of its elements. This will permit set-oriented processing whereby multiple queries are processed together. Such an algorithm is non-trivial since: (i) queries may have repeating tags and (ii) the same query may have multiple matchings into a given document. Both these features are illustrated in Figure 1." The preceding text clearly suggests that a selective sub-engine occurs in the background that produces multiple matchings in a given document.)(Lakshmanan, page 4; Figure 1); if the determining indicates that the input can be processed by the second sub-engine, then directing the input to the second sub-engine for processing (i.e. *"A more clever approach is to devise algorithms that make a constant number of passes over the document and determine the queries answered by each of its elements. This will permit set-oriented processing whereby multiple queries are processed together. Such an algorithm is non-trivial since: (i) queries may have repeating tags and (ii) the same query may have multiple matchings into a given document. Both these features are illustrated in Figure 1.*" The preceding text clearly suggests that a selective sub-engine occurs in the background that produces multiple matchings in a given document.)(Lakshmanan, page 4; Figure 1); and if the determining indicates that the input cannot be processed by the first sub-engine, and that the input cannot be processed by the second sub-engine, then directing then directing the input to the general sub-engine for processing (i.e. *"We have implemented a MatchMaker system for matching XML documents to queries and for providing notification service. As an overview, XML data streams through the MatchMaker, with which users have registered their requirements in the form of queries, in a requirements registry. The MatchMaker consults the registry in determining which users a given data element is relevant to."* *"A naïve way to obtain these labels is to process the user queries, one at a time, finding all its matchings, and compile the answers into appropriate label sets for the document nodes. This strategy is very inefficient as it makes a number of passes over the given document, proportional to the number of queries."* The preceding text clearly indicates that a general sub-engine is a user queries that is used to find all matchings. Unlike a specific

sub-engine that returns selected matchings, a general sub-engine, akin to a user queries performs a general search that retrieves all matchings.)(Lashmanan, pages 3-4).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan to include a method, wherein the optimized filter sub-engine is a first optimized filter sub-engine and wherein the method comprises: if determining indicates that the input cannot be processed by the first optimized filter sub-engine, then instead of directing the input to the general filter sub-engine for processing; determining whether the input can be processed by the a second optimized filter sub-engine, wherein the second optimized filter sub-engine is configured to handle only a subset of the language, and wherein the subset of the language that the second optimized filter sub-engine is configured to handle is different than the subset of the language that the first optimized filter sub-engine is configured to handle; if the determining indicates that the input can be processed by the second optimized filter sub-engine, then directing the input to the second optimized filter sub-engine for processing; and if the determining indicates that the input cannot be processed by the second optimized filter sub-engine, then directing then directing the input to the general optimized filter sub-engine for processing. with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

The combination of Altinel and Lakshmanan do not explicitly teach optimized filter sub-engine.

Schneider teaches optimized filter sub-engine (i.e. "optimization of query execution in the presence of one or more subqueries –queries embedded within other queries". The preceding text clearly indicates that optimized filter sub-engine is optimization of query execution in the presence of one or more subqueries.)(column 5, lines 40-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan and with the further teachings of Schneider to optimized filter sub-engine with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

As per claims 6, 12, and 19, Altinel teaches a method, further comprising: parsing the input to identify first and second sub-expressions (Page 57, section 4.2, paragraph 1); determining whether the first sub-expression can be processed by the optimized filter sub-engine (Page 54, section 2.2, paragraph 2 and 3); if the first sub-expression can be processed by the selective sub-engine, directing the first sub-expression to the optimized filter sub-engine for processing (Page 54, section 2.2, paragraph 2 and 3); if the first sub-expression cannot be processed by the optimized filter sub-engine, directing the first sub-expression to the general filter sub-engine for processing (Page 54, section 2.2, paragraph 2 and 3); determining whether the second sub-expression can be processed by the optimized filter sub-engine; if the second sub-expression can be processed by the optimized filter sub-engine (Page 54, section 2.2, paragraph 2 and 3), directing the second sub-expression to the optimized filter sub-engine for processing

(Page 54, section 2.2, paragraph 2 and 3); and if the second sub-expression cannot be processed by the optimized filter sub-engine, directing the second sub-expression to the general filter sub-engine for processing (Page 54, section 2.2, paragraph 2 and 3).

The combination of Altinel and Lakshmanan do not explicitly teach optimized filter sub-engine.

Schneider teaches optimized filter sub-engine (i.e. "optimization of query execution in the presence of one or more subqueries –queries embedded within other queries". The preceding text clearly indicates that optimized filter sub-engine is optimization of query execution in the presence of one or more subqueries.)(column 5, lines 40-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Altinel with the teachings of Lakshmanan and with the further teachings of Schneider to optimized filter sub-engine with the motivation to develop several index organizations and search algorithms for performing efficient filtering of XML documents for large-scale information dissemination systems (Altinel, Abstract).

As per claims 7, 13, and 21, Altinel teaches a method, further comprising: obtaining a result of the processing of the first sub-expression (i.e. *"All the filters at a location step must evaluate to TRUE in order for the evaluation to continue to the descendant location steps."*)(page 54, section 2.2, paragraph 3); and processing the second sub-expression only if the result of the first sub-expression is true (i.e. *"All the filters at a location step must evaluate to TRUE in order for the evaluation to continue to the descendant location steps."*)(page 54, section 2.2, paragraph 3).

As per claim 9, Altinel teaches a filter engine, wherein the analyzer is further configured to analyze a new filter added to the filter engine and to determine an appropriate matcher with which to associate the new filter (page 58, section 4.2, paragraph 4).

As per claims 10, 17, and 26, Altinel teaches a filter engine, wherein the input language is Xpath (i.e. *"The profile model used in Xfilter is based on Xpath, a language for addressing parts of an XML document that was designed for use by both the XSL Transformation and Xpointer languages."*) (Page 54, section 2.2, paragraph 1).

As per claim 14, Altinel teaches a filter engine, wherein the at least one optimized matcher further comprises: a first selective sub-engine configured to process inputs that conform to a first subset of the input language (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2); a second selective sub-engine configured to process inputs that conform to a second subset of the input language (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2); and wherein the first subset and the second subset are unique subsets of the input language (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2).

As per claim 16, Altinel teaches a computer-readable media, further comprising the step of accepting input messages for both the selective sub-engine and the general sub-engine by way of a single input means so that an input message sending

Art Unit: 2165

application does not have to distinguish between the selective sub-engine and the general sub-engine (Page 54, sections 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.3; page 58; section 5, page 59, section 5.2).

As per claim 20, Altinel teaches a computer-readable storage media, further comprising the step of deriving a final result of the input message processing from at least one result of the sub-expression processing (Page 54, section 2.1; page 56, section 4, 4.1; page 57, section 4.3; page 58; section 5, page 59, sections 5.1, 5.2).

As per claim 22, Altinel teaches a computer-readable storage media, wherein each matcher includes a set of queries against which input messages directed to the respective matchers are tried, and wherein each set of queries is unique (Page 54, section 2.1; page 56, section 4, 4.1; page 57, section 4.3; page 58; section 5, page 59, section 5.2).

As per claim 24, Altinel teaches a message processing system, wherein: the optimized filter processor further comprises a first set of queries against which a message directed to the optimized filter processor is compared (Page 54, section 2.1; page 56, section 4, 4.1; page 57, section 4.3; page 58; section 5, page 59, section 5.2); the general filter processor further comprises a second set of queries against which a message directed to the general filter processor is compared; and the first set of queries contains fewer queries than the second set of queries (Page 54, section 2.1; page 56, section 4, 4.1; page 57, section 4.3; page 58; section 5, page 59, section 5.2).

As per claim 25, Altinel teaches a message processing system, wherein: the message conforms to an XML query language; the general filter processor is configured to support the entire XML query language (i.e. *"XML provides a mechanism for tagging document contents in order to better describe their organization. It allows the hierarchial organization of a document as a root element that includes sub-elements; elements can be nested to any depth."*)(Page 54, section 2.1, paragraph 3); and the optimized filter processor is configured to support a subset of the XML query language (i.e. *"XML provides a mechanism for tagging document contents in order to better describe their organization. It allows the hierarchial organization of a document as a root element that includes sub-elements; elements can be nested to any depth."*)(Page 54, section 2.1, paragraph 3).

As per claim 27, Altinel teaches a message processing system, wherein the optimized filter processor further comprises means for optimizing message processing over the set of queries included in the optimized filter processor (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2).

As per claim 28, Altinel teaches a message processing system, wherein the means for optimizing message processing further comprises a hash function (Page 56, section 4.1).

As per claim 29, Altinel teaches a message processing system, wherein: the optimized filter processor is a first filter processor; and the message processing system further comprises a second optimized filter processor to which messages may be

directed, the second optimized filter processor supporting a unique subset of the query language (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2); and the distribution means is further configured to direct the message to the second optimized filter processor if the first optimized filter processor cannot process the message but the second optimized filter processor can process the message (page 54, section 2.1, 2.2; page 56, section 4, 4.1; page 57, section 4.2).

As per claim 30, Altinel teaches a message processing system, further comprising means for parsing the message into constituent sub-expressions, and the analyzing means is further configured to process individual sub-expression as an individual message and to evaluate sub-expression processing results to derive a result corresponding to the message (Page 56, section 4.1, paragraph 3; page 57, section 4.2).

As per claim 31, Altinel teaches a message processing system, wherein the message is a sub-expression of a parent message (Page 57, section 4.2, paragraph 1).

As per claim 32, Altinel teaches a message processing system, further comprising means for determining whether a filter in the system is associated with the generalized filter processor or the optimized filter processor (Page 54, section 4, 4.1, 4.2).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhan M. Syed whose telephone number is 571-272-7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2165

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/F. M. S./
Examiner, Art Unit 2165

/Christian P. Chace/
Supervisory Patent Examiner, Art Unit 2165